



Mathieu's capacitance Cs2 of an antenna is connected in parallel with the internal capacitance Cs1 of the chip, and the capacitance Cs2 of the antenna is greater than the internal capacitance Cs1 of the chip (col. 4, lines 22-35). In short, Mathieu discloses that the capacitance Cs2 is greater than Cs1, and the resonant frequency  $f$  is defined  $f = 2 \pi (L_s C_{s2})^{1/2}$ , where the antenna capacitance is Cs2 and the antenna self-inductance is  $L_s$ . Therefore, if the resonant frequency is constant and the capacitance Cs2 is increased, the reactance  $L_s$  will inevitably decrease. As a result, the number of turns in the antenna winding has to be decreased such that the antenna cannot provide sufficient and necessary power.

In contrast, a contactless identification according to this invention is configured such that an antenna 1, a first capacitor 7 and a chip capacitor Cin3A are connected in series, and the first capacitor 7 has a capacitance C1 smaller than an input capacitance of the IC chip 3. With such a configuration, the capacitance C1 of the capacitor 7 dominantly functions (p. 6, line 17 to p. 7, line 12; p. 11, line 15 to p. 12, line 9). In this invention makes the capacitance of the dominantly functioning capacitor is smaller such that the number of turns of the antenna coil (winding) can be increased, thereby increasing the reactance of the contactless identification, and providing sufficient antenna power to support a sufficient communication distance.

The prior art (including de Vall and Mathieu) simply does not provide such motivation to address the problem to be solved. The prior art neither provide the above-discussed unexpected results in the context of RFID.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statement were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-captioned application and any patent to issue thereon.

Respectfully submitted this 11th day of January, 2006 2007

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